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MAR 19 2004
PATENT & TRADEMARK OFFICE

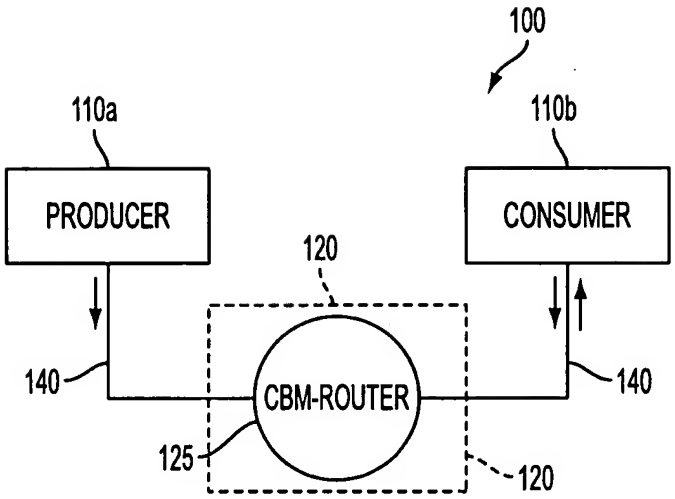

FIG. 1

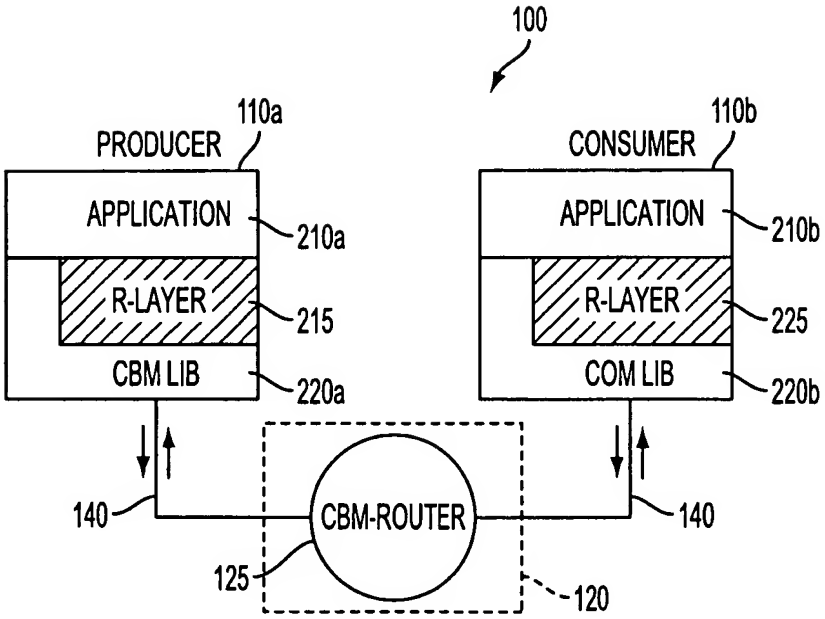
100
110a
PRODUCER
APPLICATION
210a
R-LAYER
215
CBM LIB
220a
110b
CONSUMER
APPLICATION
210b
R-LAYER
225
COM LIB
220b
140
CBM-ROUTER
140
125
120

FIG. 2

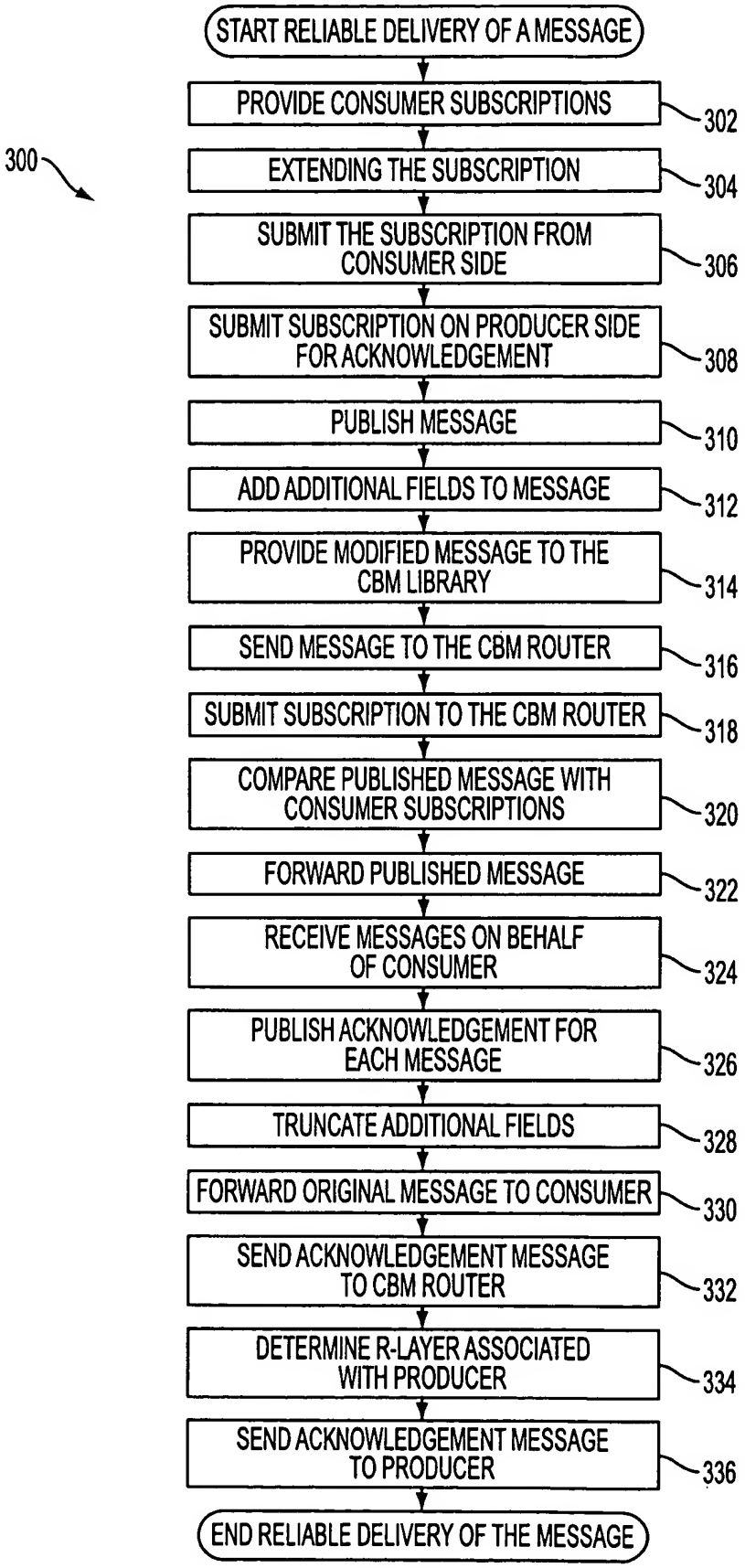
300
START RELIABLE DELIVERY OF A MESSAGE
PROVIDE CONSUMER SUBSCRIPTIONS
302
EXTENDING THE SUBSCRIPTION
304
SUBMIT THE SUBSCRIPTION FROM CONSUMER SIDE
306
SUBMIT SUBSCRIPTION ON PRODUCER SIDE FOR ACKNOWLEDGEMENT
308
PUBLISH MESSAGE
310
ADD ADDITIONAL FIELDS TO MESSAGE
312
PROVIDE MODIFIED MESSAGE TO THE CBM LIBRARY
314
SEND MESSAGE TO THE CBM ROUTER
316
SUBMIT SUBSCRIPTION TO THE CBM ROUTER
318
COMPARE PUBLISHED MESSAGE WITH CONSUMER SUBSCRIPTIONS
320
FORWARD PUBLISHED MESSAGE
322
RECEIVE MESSAGES ON BEHALF OF CONSUMER
324
PUBLISH ACKNOWLEDGEMENT FOR EACH MESSAGE
326
TRUNCATE ADDITIONAL FIELDS
328
FORWARD ORIGINAL MESSAGE TO CONSUMER
330
SEND ACKNOWLEDGEMENT MESSAGE TO CBM ROUTER
332
DETERMINE R-LAYER ASSOCIATED WITH PRODUCER
334
SEND ACKNOWLEDGEMENT MESSAGE TO PRODUCER
336
END RELIABLE DELIVERY OF THE MESSAGE

FIG. 3

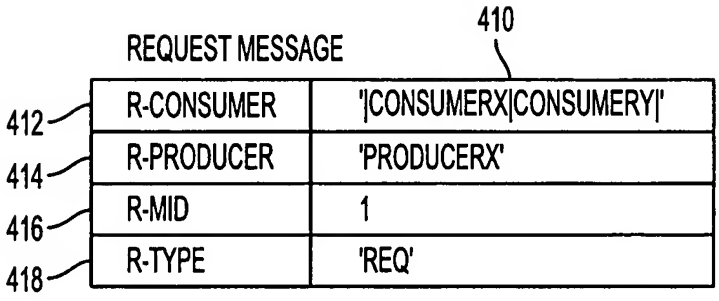
410
REQUEST MESSAGE
412
R-CONSUMER
'|CONSUMERX|CONSUMERY|'
414
R-PRODUCER
'PRODUCERX'
416
R-MID
1
418
R-TYPE
'REQ'

FIG. 4A

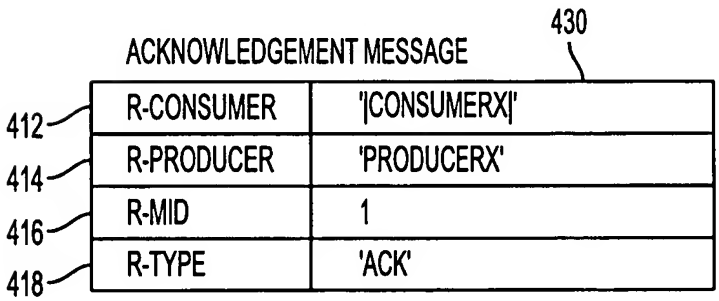
430
ACKNOWLEDGEMENT MESSAGE
412
R-CONSUMER
'|CONSUMERX|'
414
R-PRODUCER
'PRODUCERX'
416
R-MID
1
418
R-TYPE
'ACK'

FIG. 4B

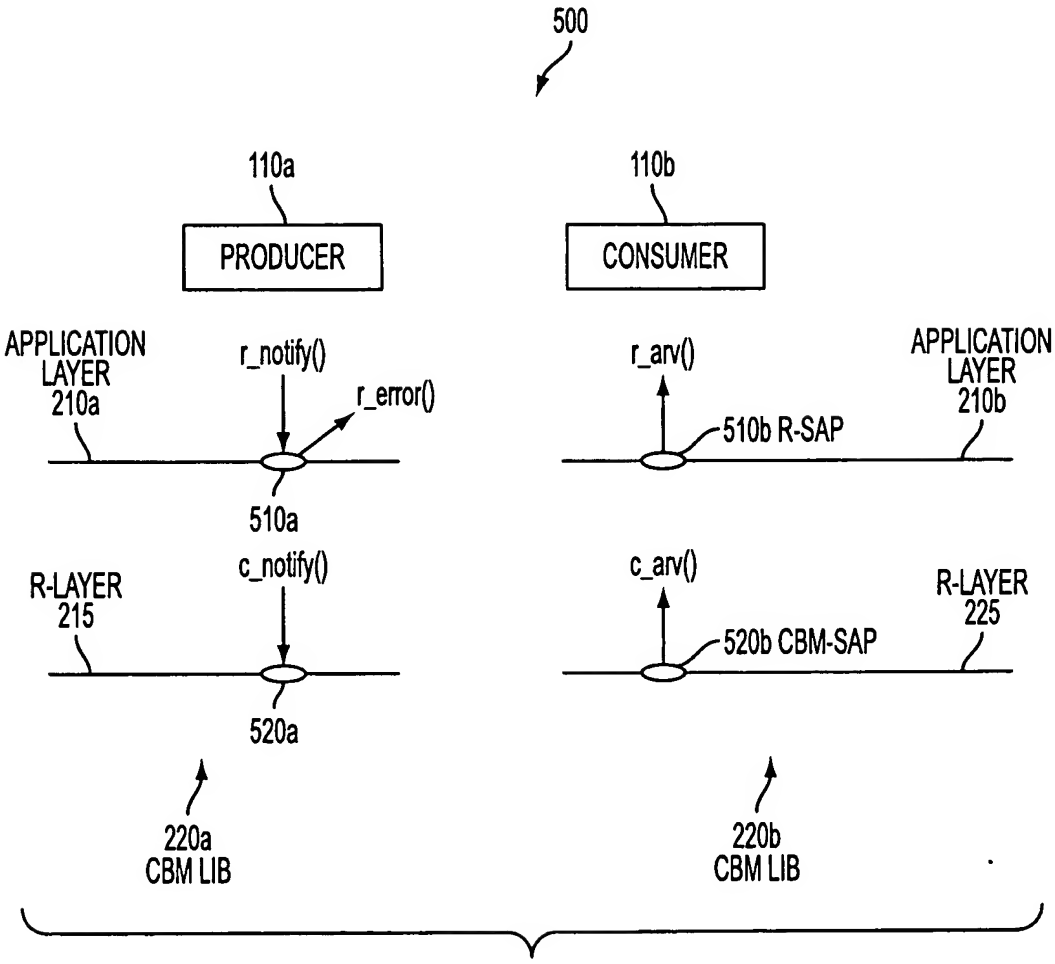
500
110a
PRODUCER
110b
CONSUMER
APPLICATION LAYER 210a
r_notify()
r_error()
510a
r_arv()
510b R-SAP
APPLICATION LAYER 210b
R-LAYER 215
c_notify()
520a
c_arv()
520b CBM-SAP
R-LAYER 225
220a CBM LIB
220b CBM LIB

FIG. 5

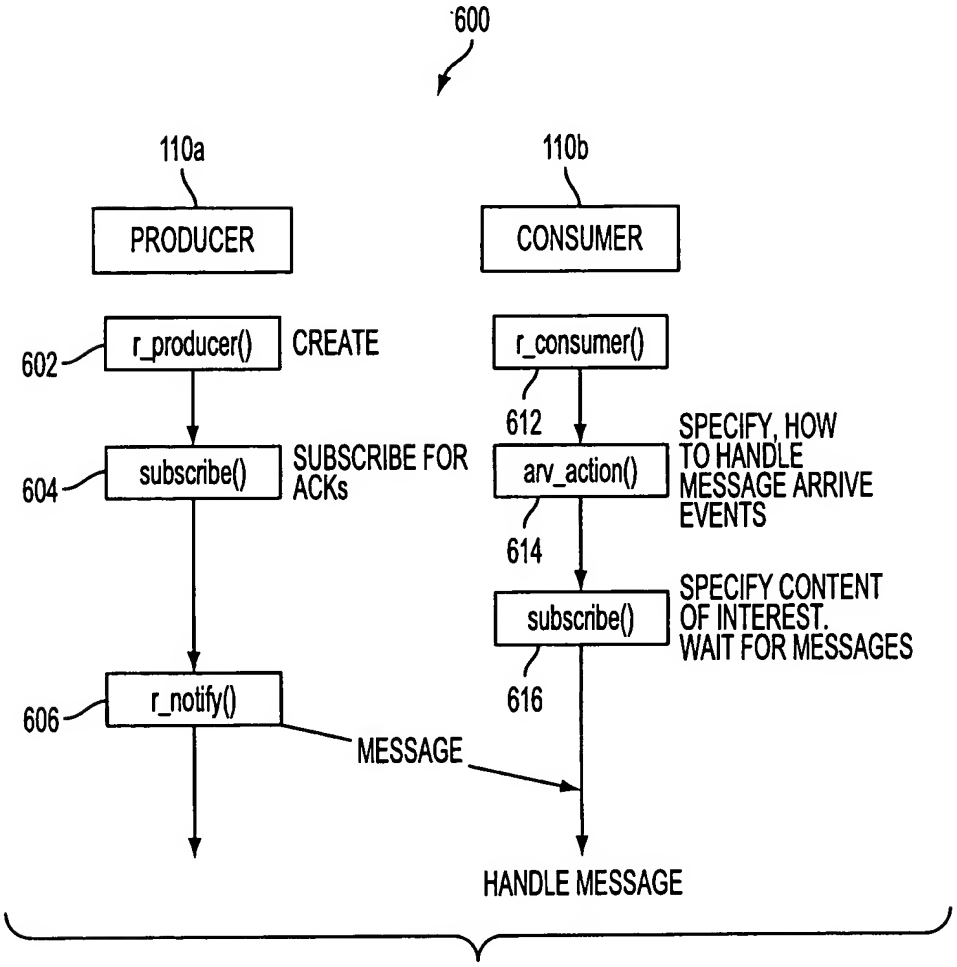
600
110a
110b
PRODUCER
CONSUMER
r_producer()
CREATE
602
r_consumer()
612
SPECIFY, HOW TO HANDLE MESSAGE ARRIVE EVENTS
subscribe()
SUBSCRIBE FOR ACKs
604
arv_action()
614
SPECIFY CONTENT OF INTEREST. WAIT FOR MESSAGES
subscribe()
616
r_notify()
606
MESSAGE
HANDLE MESSAGE

FIG. 6

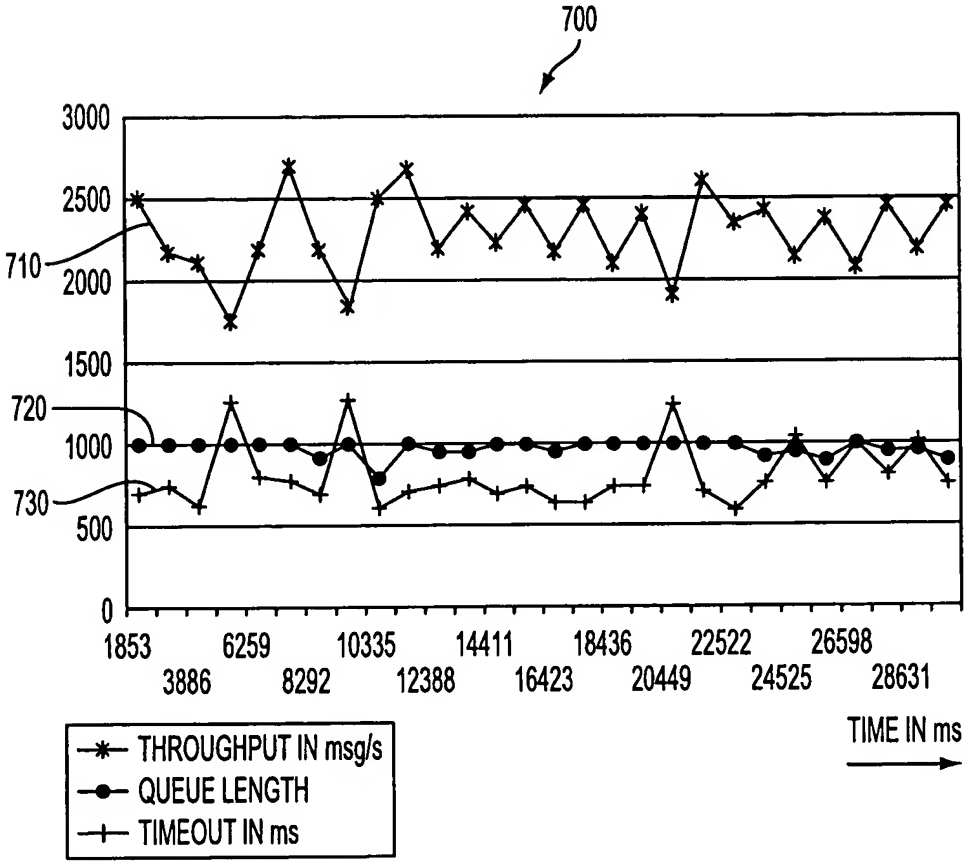
700
3000
2500
710
2000
1500
720
1000
730
500
0
1853
3886
6259
8292
10335
12388
14411
16423
18436
20449
22522
24525
26598
28631
TIME IN ms
THROUGHPUT IN msg/s
QUEUE LENGTH
TIMEOUT IN ms

FIG. 7

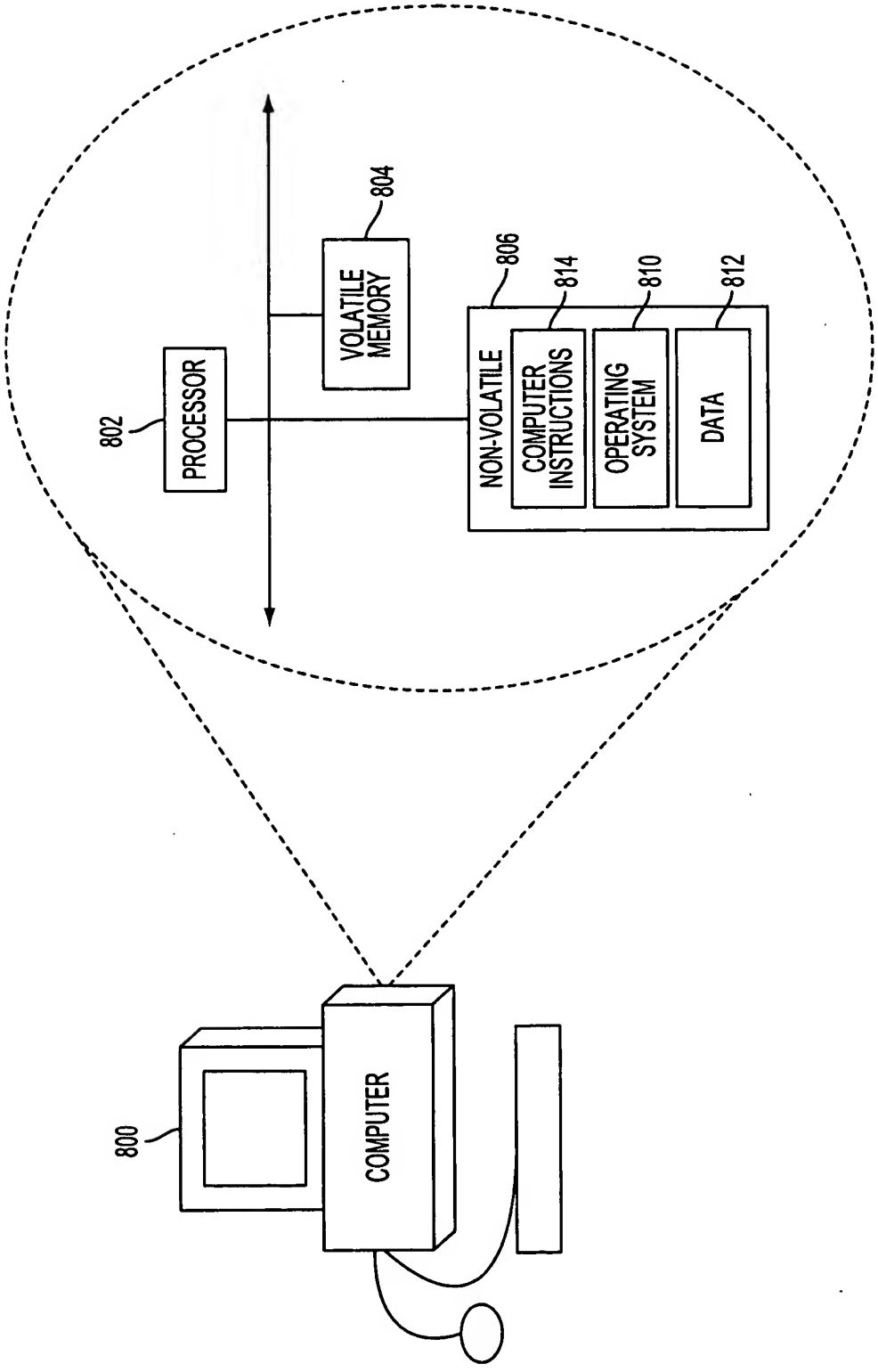
800
COMPUTER
802
PROCESSOR
804
VOLATILE MEMORY
806
NON-VOLATILE
814
COMPUTER INSTRUCTIONS
810
OPERATING SYSTEM
812
DATA

FIG. 8